

In the Claims

1. (Currently amended) A coating for an implantable medical device, the coating comprising a first region having a drug incorporated therein, and a second region disposed over the first region, wherein the second region comprises a polymer for modifying the rate of release of the drug, the polymer having in a dry state a glass transition temperature within a range of between about 35°C and about 50°C, wherein the polymer in the dry state contains less than about 1 mass % of water, and

wherein when the body temperature of the patient in which the device is implanted rises to a temperature above the patient's normal body temperature, the morphology of coating changes so as to change the release rate of the drug in the coating.

2. (Original) The coating of Claim 1, wherein the implantable medical device is a stent.

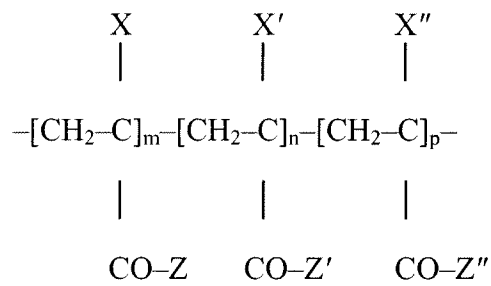
3. (Original) The coating of Claim 1, wherein the drug is an anti-inflammatory drug.

4. (Original) The coating of Claim 1, wherein the polymer comprises acrylic polymers, non-acrylic polymers, or blends thereof.

5. (Withdrawn) The coating of Claim 4, wherein the acrylic polymers are selected from a group consisting of poly(*tert*-butyl acrylate), poly[3-chloro-2,2-*bis*(chloromethyl) propyl acrylate], poly(cyanobenzyl acrylate), poly(2-methoxycarbonylphenyl acrylate), poly(3-methoxycarbonylphenyl acrylate), poly(4-ethoxycarbonylphenyl acrylate), poly(hexadecyl acrylate), poly(3-dimethylaminophenyl acrylate), poly(*p*-tolyl acrylate), poly(*n*-butyl acrylamide), poly(*iso*-decyl acrylamide), poly(octafluoropentyl methacrylate), poly(3,3-dimethylbutyl methacrylate), isotactic poly(methyl methacrylate), poly(*n*-propyl methacrylate), isotactic poly(ethyl chloroacrylate), poly(ethyl fluoromethacrylate), and blends thereof.

6. (Original) The coating of Claim 4, wherein the non-acrylic polymers are selected from a group consisting of, poly(2-cyclohexylethylethylene), atactic poly(*iso*-propylethylene), poly(1,1,2-trimethylethylene), poly(4,4 dimethylpentylethylene), poly(2,2,2-trifluoroethoxytrifluoroethylene), poly(4-methoxybenzoylethylene), poly(3,4-dimethoxybenzoylethylene), poly(vinyl fluoride), poly(cyclopentanoyloxyethylene), 60% syndiotactic poly(formyloxyethylene), poly[4-(*sec*-butoxymethyl) styrene], poly(4-butoxystyrene), and blends thereof.

7. (Withdrawn) The coating of Claim 4, wherein the acrylic polymers have formula



wherein:

X, X', and X'' is each, independently, a hydrogen atom or an alkyl group, such as methyl group;

Z, Z', and Z'' is each, independently, a substituted or unsubstituted amino group or an alkoxy group OR, OR', and OR'', where R, R' and R'' is each, independently, a C₁ to C₁₂ straight chained or branched aliphatic radical; and

“m,” “n,” and “p” is each an integer, where m > 0, n ≥ 0, and p ≥ 0.

8. (Original) The coating of Claim 1, wherein the polymer has the melting temperature above about 50°C, and additionally including a substance having the melting temperature within the range between about 32 °C and 40°C.

9. (Currently amended) A coating for an implantable medical device, comprising a polymer and a drug incorporated therein, wherein ~~a glass transition temperature of the polymer is the temperature that allows the morphology of the polymer to change the release rate of the drug~~ when the a-body temperature of the patient in which the device is implanted rises to a temperature above the patient's normal body temperature, the morphology of coating changes so as to change the release rate of the drug in the coating.

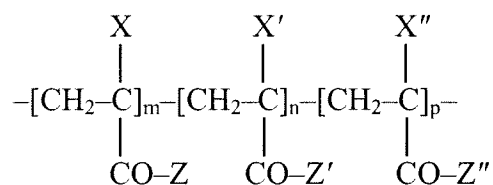
10. (Original) The coating of Claim 9, wherein the implantable medical device is a stent.

11. (Currently amended) The coating of Claim 9, wherein the polymer has a glass transition temperature of the polymer in a dry state is about 37°C, wherein the polymer in the dry state contains less than about 1 mass % of water.

12. (Original) The coating of Claim 9, wherein the polymer comprises acrylic polymers, non-acrylic polymers, or blends thereof.

13. (Withdrawn) The coating of Claim 12, wherein the acrylic polymers are selected from a group consisting of poly(*tert*-butyl acrylate), poly[3-chloro-2,2-*bis*(chloromethyl) propyl acrylate], poly(cyanobenzyl acrylate), poly(2-methoxycarbonylphenyl acrylate), poly(3-methoxycarbonylphenyl acrylate), poly(4-ethoxycarbonylphenyl acrylate), poly(hexadecyl acrylate), poly(3-dimethylaminophenyl acrylate), poly(*p*-tolyl acrylate), poly(*n*-butyl acrylamide), poly(*iso*-decyl acrylamide), poly(octafluoropentyl methacrylate), poly(3,3-dimethylbutyl methacrylate), isotactic poly(methyl methacrylate), poly(*n*-propyl methacrylate), isotactic poly(ethyl chloroacrylate), poly(ethyl fluoromethacrylate), and blends thereof.

14. (Withdrawn) The coating of Claim 12, wherein the acrylic polymers have a formula



wherein:

X, X', and X'' is each, independently, a hydrogen atom or an alkyl group, such as methyl group;

Z, Z', and Z'' is each, independently, a substituted or unsubstituted amino group or an alkoxy group OR, OR', and OR'', where R, R' and R'' is each, independently, a C₁ to C₁₂ straight chained or branched aliphatic radical; and

“m,” “n,” and “p” is each an integer, where m > 0, n ≥ 0, and p ≥ 0.

15. (Original) The coating of Claim 12, wherein the non-acrylic polymers are selected from a group consisting of, poly(2-cyclohexylethylethylene), atactic poly(*iso*-propylethylene), poly(1,1,2-trimethylethylene), poly(4,4 dimethylpentylethylene), poly(2,2,2-trifluoroethoxytrifluoroethylene), poly(4-methoxybenzoylethylene), poly(3,4-dimethoxybenzoylethylene), poly(vinyl fluoride), poly(cyclopentanoyloxyethylene), 60% syndiotactic poly(formyloxyethylene), poly[4-(*sec*-butoxymethyl) styrene], poly(4-butoxystyrene), and blends thereof.

16. (Original) The coating of Claim 9, wherein the drug is an anti-inflammatory drug.

17. (Withdrawn) A method of coating an implantable medical device, comprising depositing a first layer on the device, the first layer including a drug incorporated therein, and depositing a second layer over the first layer, the second layer comprising a polymer for modifying the rate of release of the drug, wherein the polymer has a glass transition temperature

in a dry state within a range of between about 35°C and about 50°C, wherein the polymer in the dry state contains less than about 1 mass % of water.

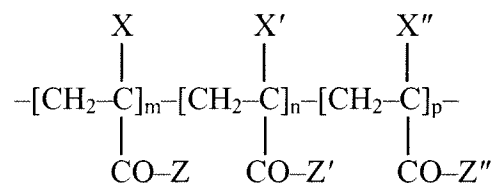
18. (Withdrawn) The method of Claim 17, wherein the implantable medical device is a stent.

19. (Withdrawn) The method of Claim 17, wherein the therapeutic agent is an anti-inflammatory drug.

20. (Withdrawn) The method of Claim 17, wherein the polymer comprises acrylic polymers, non-acrylic polymers, or blends thereof.

21. (Withdrawn) The method of Claim 20, wherein the acrylic polymers are selected from a group consisting of poly(*tert*-butyl acrylate), poly[3-chloro-2,2-*bis*(chloromethyl) propyl acrylate], poly(cyanobenzyl acrylate), poly(2-methoxycarbonylphenyl acrylate), poly(3-methoxycarbonylphenyl acrylate), poly(4-ethoxycarbonylphenyl acrylate), poly(hexadecyl acrylate), poly(3-dimethylaminophenyl acrylate), poly(*p*-tolyl acrylate), poly(*n*-butyl acrylamide), poly(*iso*-decyl acrylamide), poly(octafluoropentyl methacrylate), poly(3,3-dimethylbutyl methacrylate), isotactic poly(methyl methacrylate), poly(*n*-propyl methacrylate), isotactic poly(ethyl chloroacrylate), poly(ethyl fluoromethacrylate), and blends thereof.

22. (Withdrawn) The method of Claim 20, wherein the acrylic polymers have formula



wherein:

X, X', and X'' is each, independently, a hydrogen atom or an alkyl group, such as methyl group;

Z, Z', and Z'' is each, independently, a substituted or unsubstituted amino group or an alkoxy group OR, OR', and OR'', where R, R' and R'' is each, independently, a C₁ to C₁₂ straight chained or branched aliphatic radical; and

“m,” “n,” and “p” is each an integer, where $m > 0$, $n \geq 0$, and $p \geq 0$.

23. (Withdrawn) The method of Claim 20, wherein the non-acrylic polymers are selected from a group consisting of, poly(2-cyclohexylethylethylene), atactic poly(*iso*-propylethylene), poly(1,1,2-trimethylethylene), poly(4,4 dimethylpentylethylene), poly(2,2,2-trifluoroethoxytrifluoroethylene), poly(4-methoxybenzoylethylene), poly(3,4-dimethoxybenzoylethylene), poly(vinyl fluoride), poly(cyclopentanoyloxyethylene), 60% syndiotactic poly(formyloxyethylene), poly[4-(*sec*-butoxymethyl) styrene], poly(4-butoxystyrene), and blends thereof.

24. (Withdrawn) The method of Claim 17, wherein the polymer has the melting temperature above about 50°C, and additionally including a substance having the melting temperature within the range between about 32 °C and 40°C.